

## **RAW SEQUENCE LISTING**

**The Biotechnology Systems Branch of the Scientific and Technical Information Center (STIC) no errors detected.**

Application Serial Number: 09/319,156C  
Source: 1FW16  
Date Processed by STIC: 11/10/05

***ENTERED***



IFW16

## RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/319,156C

DATE: 11/10/2005

TIME: 13:04:56

Input Set : A:\103514-mlm-11-05.ST25.txt  
 Output Set: N:\CRF4\11102005\I319156C.raw

3 <110> APPLICANT: PARANHOS-BACCALA, Glauzia  
 4 KOMURIAN-PRADEL, Florence  
 5 BEDIN, Frederic  
 6 SODOYER, Mireille  
 7 OTT, Catherine  
 8 MALLET, Francois  
 9 PERRON, Herve  
 10 MANDRAND, Bernard  
 12 <120> TITLE OF INVENTION: RETROVIRAL NUCLEIC MATERIAL AND NUCLEOTIDE FRAGMENTS, IN  
 13 PARTICULAR ASSOCIATED WITH MULTIPLE SCLEROSIS AND/OR RHEUMATOID  
 14 ARTHRITIS, FOR DIAGNOSTIC, PROPHYLACTIC AND THERAPEUTIC USES  
 16 <130> FILE REFERENCE: 103514  
 18 <140> CURRENT APPLICATION NUMBER: US/09/319,156C  
 19 <141> CURRENT FILING DATE: 1999-11-02  
 21 <150> PRIOR APPLICATION NUMBER: PCT/FR98/01460  
 22 <151> PRIOR FILING DATE: 1998-07-07  
 24 <150> PRIOR APPLICATION NUMBER: FR/97/08816  
 25 <151> PRIOR FILING DATE: 1997-07-07  
 27 <160> NUMBER OF SEQ ID NOS: 45  
 29 <170> SOFTWARE: PatentIn version 3.2  
 31 <210> SEQ ID NO: 1  
 32 <211> LENGTH: 34  
 33 <212> TYPE: DNA  
 34 <213> ORGANISM: MSRV  
 36 <400> SEQUENCE: 1  
 37 gactcgctgc agatcgattt tttttttttt tttt 34  
 40 <210> SEQ ID NO: 2  
 41 <211> LENGTH: 30  
 42 <212> TYPE: DNA  
 43 <213> ORGANISM: MSRV  
 45 <400> SEQUENCE: 2  
 46 gccatcaaggc cacccaaagaa ctcttaactt 30  
 49 <210> SEQ ID NO: 3  
 50 <211> LENGTH: 30  
 51 <212> TYPE: DNA  
 52 <213> ORGANISM: MSRV  
 54 <400> SEQUENCE: 3  
 55 ccaatagcca gaccattata tacactaatt 30  
 58 <210> SEQ ID NO: 4  
 59 <211> LENGTH: 310  
 60 <212> TYPE: DNA  
 61 <213> ORGANISM: MSRV  
 63 <400> SEQUENCE: 4

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64	gcttatagaa	ggaccctag	tatgggtaa	tcccctctgg	gaaaccaagc	cccagtactc	60										
66	agcaggaaaa	atagaatagg	aaacctcaca	aggacatact	ttcctccct	ccagatggct	120										
68	agccactgag	gaaggaaaaa	tacttcacc	tgcagctaac	caacagaaat	tactaaaac	180										
70	ccttcaccaa	accttcact	tagcattga	tagcaccat	cagatggcca	aattattatt	240										
72	tactggacca	ggcctttca	aaactatcaa	gaagatagtc	aggggctgtg	aagtgtgcc	300										
74	aagaaaataat						310										
77	<210>	SEQ ID NO:	5														
78	<211>	LENGTH:	103														
79	<212>	TYPE:	PRT														
80	<213>	ORGANISM:	MSRV														
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84	<221>	NAME/KEY:	misc_feature														
85	<222>	LOCATION:	(26)..(26)														
86	<223>	OTHER INFORMATION:	Xaa = any amino acid														
88	<400>	SEQUENCE:	5														
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91	1				5				10					15			
W-->	94	Pro	Gln	Tyr	Ser	Ala	Gly	Lys	Ile	Glu	Xaa	Glu	Thr	Ser	Gln	Gly	His
95					20				25					30			
98	Thr	Phe	Leu	Pro	Ser	Arg	Trp	Leu	Ala	Thr	Glu	Glu	Gly	Lys	Ile	Leu	
99						35			40					45			
102	Ser	Pro	Ala	Ala	Asn	Gln	Gln	Lys	Leu	Leu	Lys	Thr	Leu	His	Gln	Thr	
103						50			55					60			
106	Phe	His	Leu	Gly	Ile	Asp	Ser	Thr	His	Gln	Met	Ala	Lys	Leu	Leu	Phe	
107	65					65			70			75		80			
110	Thr	Gly	Pro	Gly	Leu	Phe	Lys	Thr	Ile	Lys	Lys	Ile	Val	Arg	Gly	Cys	
111						85			90					95			
114	Glu	Val	Cys	Gln	Arg	Asn	Asn										
115					100												
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119	<211>	LENGTH:	635														
120	<212>	TYPE:	DNA														
121	<213>	ORGANISM:	MSRV														
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126	caaattgttc	ttcaaatgga	gcaccagatg	gagtccatga	ctaagatcca	ccgtggaccc	120										
128	ctggaccggc	ctgctagccc	atgctccgat	gttaatgaca	ttgaaggcac	ccctcccgag	180										
130	gaaatctcaa	ctgcacaacc	cctactatgc	cccaattcag	cgggaagcac	ttagagcggt	240										
132	catcagccaa	cctcccaaac	agcacttggg	ttttctgtt	gagagggggg	actgagagac	300										
134	aggactagct	ggatttccta	ggccaacgaa	gaatccctaa	gcctagctgg	gaaggtgact	360										
136	gcatccaccc	ctaaacatgg	ggcttgcaac	ttagctcaca	cccgaccaat	cagagagctc	420										
138	actaaaaatgc	taattaggca	aaaataggag	gtaaagaaat	agccaatcat	ctattgcctg	480										
140	agagcacacgc	gggagggaca	aggatcggga	tataaaccctt	ggcattcgag	ccgcaacgg	540										
142	caacccccc	tgggtccct	ccctttgtat	gggcgctctg	ttttcactct	atttcactct	600										
144	attaaatctt	gcaactgaaa	aaaaaaaaaaa	aaaaaa			635										
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148	<211>	LENGTH:	77														
149	<212>	TYPE:	PRT														
150	<213>	ORGANISM:	MSRV														

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Input Set : A:\103514-mlm-11-05.ST25.txt

Output Set: N:\CRF4\11102005\I319156C.raw

152 <400> SEQUENCE: 7  
 154 Pro Cys Ile Phe Asn Leu Leu Val Lys Phe Val Ser Ser Arg Ile Lys  
 155 1 5 10 15  
 158 Thr Val Lys Leu Gln Ile Val Leu Gln Met Glu His Gln Met Glu Ser  
 159 20 25 30  
 162 Met Thr Lys Ile His Arg Gly Pro Leu Asp Arg Pro Ala Ser Pro Cys  
 163 35 40 45  
 166 Ser Asp Val Asn Asp Ile Glu Gly Thr Pro Pro Glu Glu Ile Ser Thr  
 167 50 55 60  
 170 Ala Gln Pro Leu Leu Cys Pro Asn Ser Ala Gly Ser Ser  
 171 65 70 75

174 <210> SEQ ID NO: 8  
 175 <211> LENGTH: 32  
 176 <212> TYPE: DNA  
 177 <213> ORGANISM: MSRV  
 179 <400> SEQUENCE: 8  
 180 tggggttcca tttgttaagac catctgttagc tt 32  
 183 <210> SEQ ID NO: 9  
 184 <211> LENGTH: 1481  
 185 <212> TYPE: DNA  
 186 <213> ORGANISM: MSRV  
 188 <400> SEQUENCE: 9  
 189 atggccctcc cttatcatac ttttctctt actgttctct tacccccc tt cgctctca 60  
 191 gcacccccc catgctgctg tacaaccgt agctcccc accaagagtt tctatgaaga 120  
 193 acggcgcttc ctggaaatat tgatgccccca tcataatagga gtttatctaa gggaaactcc 180  
 195 accttcactg cccacaccca tatgccccgc aactgctata actctgccc ac tcttgcatg 240  
 197 catgcaaata ctcattattt gacaggaaa atgattaatc ctatgttgc tggaggactt 300  
 199 ggagccactg tctgttggac ttacttcacc cataccagta tgcgtatgg ggggaaatt 360  
 201 caaggtcagg caagaaaaaaa acaagtaaag gaagcaatct cccaaactgac ccggggacat 420  
 203 agcaccctca gcccctacaa aggactagg ctctcaaaac tacatgaaac cctccgtacc 480  
 205 catactcgcc tggtgagcct atttaatacc accctcaactc ggctccatga ggtctcagcc 540  
 207 caaaaccctca ctaactgttg gatgtgcctc cccctgcact tcaggccata cattcaatc 600  
 209 cctgttccctg aacaatggaa caacttcagg acagaaaataa acaccactc cgttttagta 660  
 211 ggacctcttg ttccaaatct gaaataacc catacctaa acctcacctg tgtaaaattt 720  
 213 agcaatacta tagacacaac cagctcccaa tgcataagg ggttaacacc tcccacacga 780  
 215 atagtctgcc taccctcagg aatattttt gtctgttgc cctcagccta tcattgttt 840  
 217 aatggctctt cagaatctat gtgttccctc tcattcttag tgccccctat gaccatctac 900  
 219 actgaacaag atttatacaa tcatgtcgta cctaaaggccc acaacaaaag agtaccatt 960  
 221 ctcccttttg ttatcagagc aggagtgcata ggcagactag gtactggcat tggcagtatc 1020  
 223 acaacctcta ctcaggctca ctacaaacta tctcaagaaa taaatggta catggaaacag 1080  
 225 gtcactgact ccctggtcac ttgcaagat caacttaact ccctagcagc agtagtcctt 1140  
 227 caaaatcgaa gagctttaga ttgctaaacc gccaaggag gggaaacctg tttatttta 1200  
 229 ggagaagaac gctgttatta tgtaatcaa tccagaatttgcactgagaa agttaaagaa 1260  
 231 attcgagatc gaatacaatg tagagcagag gagcttcaaa acaccgaacg ctggggcctc 1320  
 233 ctcagccaaat ggttccctg gtttccccc ttcttaggac ctctagcagc tctaatattt 1380  
 235 ttactcctctt ttggaccctg tatcttaac ctccttgc a gtttgc ttcaggaaattt 1440  
 237 gaagctgtta agtacatggat ggttccctt aatggaaacccc a 1481  
 240 <210> SEQ ID NO: 10  
 241 <211> LENGTH: 493

RAW SEQUENCE LISTING  
PATENT APPLICATION: US/09/319,156C

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Input Set : A:\103514-mlm-11-05.ST25.txt  
Output Set: N:\CRF4\11102005\I319156C.raw

242 <212> TYPE: PRT  
 243 <213> ORGANISM: MSRV  
 246 <220> FEATURE:  
 247 <221> NAME/KEY: misc\_feature  
 248 <222> LOCATION: (39)..(39)  
 249 <223> OTHER INFORMATION: Xaa = any amino acid  
 251 <400> SEQUENCE: 10  
 253 Met Ala Leu Pro Tyr His Thr Phe Leu Phe Thr Val Leu Leu Pro Pro  
 254 1 5 10 15  
 257 Phe Ala Leu Thr Ala Pro Pro Pro Cys Cys Cys Thr Thr Ser Ser Ser  
 258 20 25 30  
 W--> 261 Pro Tyr Gln Glu Phe Leu Xaa Arg Thr Arg Leu Pro Gly Asn Ile Asp  
 262 35 40 45  
 265 Ala Pro Ser Tyr Arg Ser Leu Ser Lys Gly Asn Ser Thr Phe Thr Ala  
 266 50 55 60  
 269 His Thr His Met Pro Arg Asn Cys Tyr Asn Ser Ala Thr Leu Cys Met  
 270 65 70 75 80  
 273 His Ala Asn Thr His Tyr Trp Thr Gly Lys Met Ile Asn Pro Ser Cys  
 274 85 90 95  
 277 Pro Gly Gly Leu Gly Ala Thr Val Cys Trp Thr Tyr Phe Thr His Thr  
 278 100 105 110  
 281 Ser Met Ser Asp Gly Gly Ile Gln Gly Gln Ala Arg Glu Lys Gln  
 282 115 120 125  
 285 Val Lys Glu Ala Ile Ser Gln Leu Thr Arg Gly His Ser Thr Pro Ser  
 286 130 135 140  
 289 Pro Tyr Lys Gly Leu Val Leu Ser Lys Leu His Glu Thr Leu Arg Thr  
 290 145 150 155 160  
 293 His Thr Arg Leu Val Ser Leu Phe Asn Thr Thr Leu Thr Arg Leu His  
 294 165 170 175  
 297 Glu Val Ser Ala Gln Asn Pro Thr Asn Cys Trp Met Cys Leu Pro Leu  
 298 180 185 190  
 301 His Phe Arg Pro Tyr Ile Ser Ile Pro Val Pro Glu Gln Trp Asn Asn  
 302 195 200 205  
 305 Phe Ser Thr Glu Ile Asn Thr Thr Ser Val Leu Val Gly Pro Leu Val  
 306 210 215 220  
 309 Ser Asn Leu Glu Ile Thr His Thr Ser Asn Leu Thr Cys Val Lys Phe  
 310 225 230 235 240  
 313 Ser Asn Thr Ile Asp Thr Thr Ser Ser Gln Cys Ile Arg Trp Val Thr  
 314 245 250 255  
 317 Pro Pro Thr Arg Ile Val Cys Leu Pro Ser Gly Ile Phe Phe Val Cys  
 318 260 265 270  
 321 Gly Thr Ser Ala Tyr His Cys Leu Asn Gly Ser Ser Glu Ser Met Cys  
 322 275 280 285  
 325 Phe Leu Ser Phe Leu Val Pro Pro Met Thr Ile Tyr Thr Glu Gln Asp  
 326 290 295 300  
 329 Leu Tyr Asn His Val Val Pro Lys Pro His Asn Lys Arg Val Pro Ile  
 330 305 310 315 320  
 333 Leu Pro Phe Val Ile Arg Ala Gly Val Leu Gly Arg Leu Gly Thr Gly  
 334 325 330 335

RAW SEQUENCE LISTING  
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Input Set : A:\103514-mlm-11-05.ST25.txt  
Output Set: N:\CRF4\11102005\I319156C.raw

337 Ile Gly Ser Ile Thr Thr Ser Thr Gln Phe Tyr Tyr Lys Leu Ser Gln  
338 340 345 350  
341 Glu Ile Asn Gly Asp Met Glu Gln Val Thr Asp Ser Leu Val Thr Leu  
342 355 360 365  
345 Gln Asp Gln Leu Asn Ser Leu Ala Ala Val Val Leu Gln Asn Arg Arg  
346 370 375 380  
349 Ala Leu Asp Leu Leu Thr Ala Lys Arg Gly Gly Thr Cys Leu Phe Leu  
350 385 390 395 400  
353 Gly Glu Glu Arg Cys Tyr Tyr Val Asn Gln Ser Arg Ile Val Thr Glu  
354 405 410 415  
357 Lys Val Lys Glu Ile Arg Asp Arg Ile Gln Cys Arg Ala Glu Glu Leu  
358 420 425 430  
361 Gln Asn Thr Glu Arg Trp Gly Leu Leu Ser Gln Trp Met Pro Trp Val  
362 435 440 445  
365 Leu Pro Phe Leu Gly Pro Leu Ala Ala Leu Ile Leu Leu Leu Leu Phe  
366 450 455 460  
369 Gly Pro Cys Ile Phe Asn Leu Leu Val Lys Phe Val Ser Ser Arg Ile  
370 465 470 475 480  
373 Glu Ala Val Lys Leu Gln Met Val Leu Gln Met Glu Pro  
374 485 490  
377 <210> SEQ ID NO: 11  
378 <211> LENGTH: 32  
379 <212> TYPE: DNA  
380 <213> ORGANISM: MSRV  
382 <400> SEQUENCE: 11  
383 tcaaaaatcg a agagcttag acttgcttaac cg 32  
386 <210> SEQ ID NO: 12  
387 <211> LENGTH: 1329  
388 <212> TYPE: DNA  
389 <213> ORGANISM: MSRV  
392 <220> FEATURE:  
393 <221> NAME/KEY: misc\_feature  
394 <222> LOCATION: (594)..(594) /  
395 <223> OTHER INFORMATION: n = a, g, c or t/u  
397 <220> FEATURE:  
398 <221> NAME/KEY: misc\_feature /  
399 <222> LOCATION: (602)..(602) /  
400 <223> OTHER INFORMATION: n = a, g, c or t/u  
402 <220> FEATURE:  
403 <221> NAME/KEY: misc\_feature /  
404 <222> LOCATION: (1232)..(1232) /  
405 <223> OTHER INFORMATION: n = a, g, c or t/u  
407 <400> SEQUENCE: 12  
408 tcaaaaatcg a agagcttag acttgcttaac cgccaaaaga gggggAACCT gtttattttt 60  
410 aggggaagaa tgcttttagt atgttaatca atcttggaaatc attactgaga aagttaaaga 120  
412 aatttggat cgaatataat gttagcaga ggaccttcaa aacactgcac cctggggcct 180  
414 cctcagccaa tggatgcctt ggactctccc cttcttagga cctctagcag ctataatatt 240  
416 ttactcctc tttggaccct gtatcttcaa cttcttggtt aagtttgctt cttccagaat 300  
418 tgaagctgta aagctacaaa tagtcttca aatgaaaccc cagatgcagt ccatgactaa 360

RAW SEQUENCE LISTING ERROR SUMMARY DATE: 11/10/2005  
PATENT APPLICATION: US/09/319,156C TIME: 13:04:57

Input Set : A:\103514-mlm-11-05.ST25.txt  
Output Set: N:\CRF4\11102005\I319156C.raw

**Please Note:**

Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the <220> to <223> fields of each sequence which presents at least one n or Xaa.

Seq#:5; Xaa Pos. 26  
Seq#:10; Xaa Pos. 39  
Seq#:12; N Pos. 594,602,1232  
Seq#:13; Xaa Pos. 26,42,46  
Seq#:40; N Pos. 1240,1246

## VERIFICATION SUMMARY

DATE: 11/10/2005

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Input Set : A:\103514-mlm-11-05.ST25.txt

Output Set: N:\CRF4\11102005\I319156C.raw

L:94 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:5 after pos.:16  
L:261 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:10 after pos.:32  
L:426 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:12 after pos.:540  
L:428 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:12 after pos.:600  
L:448 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:12 after pos.:1200  
L:482 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:13 after pos.:16  
L:486 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:13 after pos.:32  
L:1233 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:40 after pos.:1200